

REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested. Claims 1-7 and 9-10 are pending, Claim 8 having previously been canceled, Claim 1 having been amended and Claims 9 and 10 having been added by way of the present amendment. Support for the amendment to Claim 1 and the addition of new Claims 9 and 10 is found at least in Figure 4 of the present application, and the associated text, for example at pages 17-22. Therefore no new matter is added.

In the outstanding Office Action, Claims 1-7 were rejected as being anticipated by Stubbs (U.S. Patent 5,327,358); and Claims 1-7 were rejected as being anticipated by Liu "System Implementation, Modeling, Defects Pattern Recognition for Flip Chip Solder Joint Inspection Using Laser Techniques", Ph.D. Dissertation, March 2001, (hereinafter Liu).

With regard to paragraph 2 of the outstanding Office Action, Applicants object to the assertion that Stubbs is an anticipatory reference because even the Office Action recognizes that Stubbs is missing a step. The Office Action states that Stubbs "is directed to a step forward in the art by not explicitly requiring the correlation." For a prior art reference to anticipate a claim, it is necessary for the prior art reference to disclose all elements of the claimed invention (MPEP 2131). Stubbs simply does not teach or suggest the correlating of the actual data to theoretical data and thus Stubbs is not an anticipatory reference.

Nevertheless, Applicants have amended Claim 1 to further clarify that the "degree of correlation" used in the "extracting step" is substantially different than anything taught or suggested by Stubbs or Liu. Moreover, Claim 1 has been amended to clarify that the claimed method requires a step of extracting an extracted calculated mode vector of a plurality of calculated mode vectors having a degree of correlation at or above a predetermined threshold, the degree of correlation being relative to an experimental mode vector obtained by experiment. The extracting step includes reducing a number of the plurality of calculated

mode vectors by filtering the plurality of calculated mode vectors using at least one of order ratio filtering, component comparison filtering and frequency filtering. Nowhere does Stubbs teach or suggest such an extracting step that includes the filtering step as claimed.

Furthermore, based on the rationale in paragraph 2 of the outstanding Office Action, Stubbs would not benefit by any such filtering step, because Stubbs does not expressly require the correlation. Therefore, it is respectfully submitted that Stubbs does not anticipate (expressly or inherently) amended Claim 1.

Liu describes in chapter 6 thereof, modeling based on vibrational modal analysis. The Office Action relies on the entire chapter, namely pages 81-106 to support the contention that Liu discloses all the elements of Claims 1 and 2, for example. Applicants respectfully traverse this assertion. As was the case with Stubbs, Liu simply does not teach or suggest the step of extracting a calculated mode vector having a degree of correlation at or above a predetermined threshold, nor does it include a step of reducing the number of plurality of calculated mode vectors by filtering, as claimed. Instead, Liu is merely directed to a general purpose finite element method using modal analysis in order to determine boundary conditions. To this end, Liu neither teaches nor suggests the invention defined by amended Claim 1, as it fails to teach or suggest the claimed extracting step, and filtering step, as claimed.

As Claims 2-7 depend from amended Claim 1, it is respectfully submitted that these claims also patentably define over Stubbs and Liu.

Claim 9 is directed to the method of Claim 1 where the extracting step further comprises determining a degree of correlation of remaining calculated mode vectors after the filtering step. Similarly Claim 10 defines the method of Claim 1 where the predetermined threshold is 0.8 or larger. It is respectfully submitted that neither Stubbs nor Liu teach or

suggest the features of Claims 9 or 10. Consequently it is respectfully submitted that Claims 9 and 10 also patentably define over the asserted prior art.

Consequently, in view of the present amendment and in light of the foregoing comments, it is respectfully submitted that the invention defined by Claims 1-7 and 9-10, as amended, patentably defines over the asserted prior art. The present application is therefore believed to be in condition for formal allowance and an early and favorable reconsideration of this application is therefore requested.

Respectfully submitted,

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